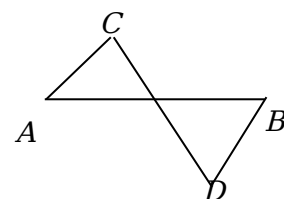


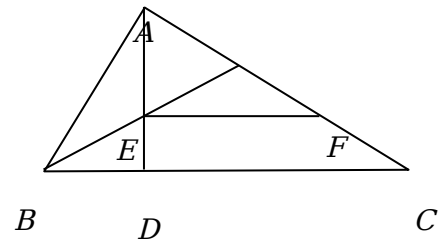
1. $P \triangle ABC$ $PA = 4$ $PC = 3$ $PB = 5$ $\angle APC$

2. If $AB = CD$ and the angle between them is 60° , prove that $AC + BD \geq AB$.

Let line segments AB and CD be equal in length, and the angle between them be 60° . Prove that $AC + BD \geq AB$.



3. In $\triangle ABC$, $\angle BAC = 90^\circ$, $AD \perp BC$ at D , the angle bisector of $\angle ABC$ intersects AD at E , $EF \parallel BC$ intersects AC at F . Prove that $AE = CF$.



In $\triangle ABC$, $\angle BAC = 90^\circ$, $AD \perp BC$ at D , the angle bisector of $\angle ABC$ intersects AD at E , $EF \parallel BC$ intersects AC at F . Prove that $AE = CF$.

4. In isosceles right triangle ABC , $\angle ACB = 90^\circ$. M and N are two points on AB such that $\angle MCN = 45^\circ$.
 Conjecture the relationship among AM , MN , and BN . Prove your conjecture.

In isosceles right triangle ABC , $\angle ACB = 90^\circ$, M and N are two points on AB such that $\angle MCN = 45^\circ$. Guess and prove the relationship among AM , MN , and BN .

